## LISTING OF CLAIMS

This listing of claims will replace all prior versions of claims in the application:

- 1. (Original) A method for establishing undifferentiated human embryonic stem cells, comprising the steps of:
  - (a) thawing a cryopreserved human blastocyst embryo; and
- (b) culturing at least a portion of said human blastocyst embryo on a medium capable of sustaining undifferentiated embryonic stem cells, whereby undifferentiated human embryonic stem cells are established.
- 2. (Original) The method for establishing undifferentiated human embryonic stem cells of claim 1, wherein said human blastocyst embryo comprises a sphere of cells with an outer cell layer, a fluid filled cavity, and the inner cell mass.
- 3. (Original) The method for establishing undifferentiated human embryonic stem cells of claim 1, wherein said human blastocyst embryo comprises a human embryo that was cryopreserved from about 5 days to about 6 days after fertilization of said embryo.
- 4. (Original) The method for establishing undifferentiated human embryonic stem cells of claim 1, wherein said human blastocyst embryo has been cryogenically stored for more than four years.
- 5. (Original) The method for establishing undifferentiated human embryonic stem cells of claim 1, wherein said thawing step comprises:
- (a) a first step of treating said cryopreserved human blastocyst embryo with a first solution comprising human follicular fluid and cryoprotectant;
- (b) a subsequent second step of treating said cryopreserved human blastocyst embryo with a second solution comprising human follicular fluid and cryoprotectant; wherein said second solution comprises a decreased concentration of cryoprotectant relative to said first solution.
- 6. (Original) The method for establishing undifferentiated human embryonic stem cells of claim 5, wherein said cryoprotectant is selected from the group consisting of sucrose, glycerol and a combination of sucrose and glycerol.
- 7. (Original) The method for establishing undifferentiated human embryonic stem cells of claim 1, wherein said thawing step consists of:
- (a) a first step of treating said cryopreserved human blastocyst embryo with a first solution comprising human follicular fluid and cryoprotectant;

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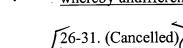
- (b) a subsequent second step of treating said cryopreserved human blastocyst embryo with a second solution comprising human follicular fluid and cryoprotectant;
- (c) a subsequent third step of treating said cryopreserved human blastocyst embryo with a third solution comprising hFF and cryoprotectant;
- (d) a subsequent fourth step of treating said cryopreserved human blastocyst embryo with a fourth solution comprising hFF and cryoprotectant; wherein said fourth solution comprises a decreased concentration of cryoprotectant relative to said third solution, said third solution comprises a decreased concentration of cryoprotectant relative to said second solution, and said second solution comprises a decreased concentration of cryoprotectant relative to said first solution.
- 8. (Original) The method for establishing undifferentiated human embryonic stem cells of claim 5, further comprising a subsequent third step of treating said cryopreserved human blastocyst embryo with a third solution comprising hFF and cryoprotectant; wherein said third solution comprises about 0.1-2 vol % glycerol, said second solution comprises about 2-4 vol % glycerol, and said first solution comprises about 4-6 vol % glycerol.
- 9. (Original) The method for establishing undifferentiated human embryonic stem cells of claim 5, wherein at least one of said treating steps is carried out for about 4-6 minutes.
- 10. (Original) The method for establishing undifferentiated human embryonic stem cells of claim 5, wherein said first solution and said second solution each comprise about 15-25% human follicular fluid.
- 11. (Original) The method for establishing undifferentiated human embryonic stem cells of claim 1, further comprising a step of removing trophectoderm from said embryo using anti-human lymphocyte antibody.
- 12. (Original) The method for establishing undifferentiated human embryonic stem cells of claim 1, wherein said portion of said embryo comprises the inner cell mass.
- 13. (Original) An undifferentiated human embryonic stem cell culture formed using the method of any one of claims 1 to 12.
- 14. (Original) A method for establishing undifferentiated human embryonic stem cells comprising the steps of:
- (a) obtaining a population of cryogenically stored human embryos, wherein said population of embryos consists of embryos in the blastocyst phase;
  - (b) thawing one or more of said embryos; and

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(c) culturing at least a portion of each of said one or more thawed embryos on a medium capable of sustaining undifferentiated embryonic stem cells; whereby undifferentiated human embryonic stem cells are established.

## 15-24 (Cancelled)

25. (Currently Amended) An undifferentiated human embryonic stem cell culture formed using the method of claim 24-by culturing at least a portion of an inner cell mass of a human blastocyst embryo, which is isolated by treating a cryopreserved and thawed embryo with an anti-human lymphocyte antibody, on a medium capable of sustaining undifferentiated embryonic stem cells, whereby undifferentiated human embryonic stem cells are established.



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